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## caBIG®LexEVS 5.0 Boot Camp

The caBIG® LexEVS 5.0 Developer Boot Camp was held November 17th, 18th, and 19th, 2009, at the NCI CBIIT Training facility in Rockville, Md. This intermediate/ advanced level hands-on training session focused on understanding the terminology model as well as, how to use the LexEVS API in local, distributed, and grid environments to develop efficient LexEVS-aware services and applications. There was a specific focus for those migrating from EVS 3.x/LexEVS 4.x to LexEVS 5.0. Please see [LexEVS 5.0 Boot Camp](#) for more information.

## Tool overview

This version represents the next generation of NCI Enterprise Vocabulary Services. In this release, the LexBIG Java API and LexGrid model become the strategic EVS interfaces, replacing the legacy EVS API and EVS 3.2 model.

### New LexEVS 5.0 Architecture

### LexEVS 4.2 Architecture

## What's new

LexEVS 5.0 represents the next generation of NCI Enterprise Vocabulary Services. In this release, the LexBIG Java API and LexGrid model become the strategic EVS interfaces, replacing the legacy EVS API and the EVS 3.2 model.

### LexEVS 5.0 Highlights:

- Complete shift from the EVS Model and EVS API to the LexBIG API (LexEVS) and LexGrid Model
- Introduction of LexGrid-based QBE services
- Consistent naming and release numbers for API and services
- Unified OWL loader (migration from the NCI OWL loader and a generic OWL loader to a single loader)
- 2008/01 model updated to the 2009/01 LexGrid Model
  - ◆ The 2009/01 LexGrid Model is more consistent semantically.
  - ◆ For example, the notion of Metathesaurus and 'Description Logic' concepts was split in the EVS model. In the LexGrid model, classes/instances/associations are represented consistently regardless of source.
- Other benefits of LexEVS 5.0
  - ◆ Optimized query execution (ability to place an arbitrary number of restrictions on a search request, which are automatically combined by the runtime when on node or graph resolution)
  - ◆ Improved graph navigation (navigation of arbitrary relationships within a specific distance, uni- or bi-directional navigation, ability to place multiple search restrictions based on association name or qualifier)
  - ◆ Expanded representation of sources (LexGrid model is capable of representing additional ontology sources and/or semantics for some sources, compared to the legacy EVS model)
  - ◆ Improved concept search (support of additional match algorithms, ability to place multiple search restrictions based on properties by type, name, value, or qualifier)
  - ◆ Introduction of a data grid service for access to EVS vocabularies. Previously only an analytical grid service was available.

### **Unified Design:**

- The unified design of LexEVS 5.0 no longer supports the EVS Model and EVS API. Both have been completely replaced with LexEVS components. The benefit of this design is migration to a more heterogeneous code base which streamlines the API.

## **At-a-glance specifications**

- Version Number and Release Date: Version 5.0 released on May 12, 2009.
- Grid Enabled
- Compatibility Level: submitted for Silver
- Installation Level: Intermediate - technical assistance may be required, download may require supporting infrastructure or software
- Technology Stack:
  - ◆ Operating System - Linux (though no operating system dependencies currently exist)
  - ◆ Web Server - Apache
  - ◆ App Server - JBoss 4.0.5
  - ◆ Database Server - MySQL 5.0.45
  - ◆ Other software components - caGrid 1.2 / Globus 4.0.3
  - ◆ Server Hardware - NCI standard hardware.

- ◆ Minimum processor speed - Minimum required by JBoss.
- ◆ Minimum memory - Minimum required by JBoss.
- ◆ Expected file server disk storage (in MB)- 200GB
- ◆ Expected database storage (in MB)- 100GB
- ◆ Networking - Standard port required by JBoss to externalize LexEVS grid service. May be assigned any suitably available port #.

## Installation and downloads

### For Everyone

Prior to using LexEVS we recommend reviewing our model and schema as this will aid in understanding and using LexEVS.

#### LexGrid Model and Schema

Information about the current and previous LexGrid models and schema.

### Beginner

For anyone new to LexEVS we recommend reviewing these pages before downloading and installing LexEVS. Once you have reviewed these pages please visit either the Installation Outline or the LexEVS 5.1 download files page below to download and start using LexEVS.

#### Installation Guide

This document outlines the supported configurations and technical installation instructions for LexGrid Vocabulary Services v5.0 for caBIG®.

#### LexEVS Quick Start

This page helps provide some recommended links to additional information for users who are new to LexEVS.

### Intermediate

#### Installation Outline

This page is for those users who are somewhat familiar with LexEVS and would like some guidance for installation. It lays out which files you may need to download to utilize LexEVS 5.1 based on what type of installation you require. There are even links to download the appropriate jars/zip files.

# Expert

## Installation Components

If you are already very familiar with LexEVS this may be the link for you. This table contains links to download the files/jars released with LexEVS 5.0, along with short descriptions of each.

## LexEVS 5.0 Download files

This takes you directly to the LexEVS 5.0 jars and zip files to download and install. If you need further installation guidance please see the installation section below or review the [LexEVS 5.0 Documentation](#).

# Documentation for version 5.0

## Release Notes

A detailed description of the features, bug fixes, and known issues in this release; also a release history.

## Design and Architecture Guide

Explains the LexGrid model and the LexBig services.

## Installation Guide

Outlines the supported configurations and technical installation instructions for LexGrid Enterprise Vocabulary Services for caBIG®.

## Administration Guide

Environment configuration from the perspective of an existing installation.

## Programmer's Guide

Explains the LexBig and LexGrid APIs and how to use the GUI.

## Migration Guide

Instructions for migrating from previous versions of LexBIG/LexEVS to the new LexEVS 5.0.

## Java Docs

Web-enabled and hosted LexEVS 5.0 [Java Docs](#)

Zip version of [Java Docs](#)

## Primary Readme

Lists contents of the caCORE LexEVS v5.0 client, required library files, demo programs, and an Ant build script. Outlines requirements for installation, describes how to run test examples, and provides licensing information.

## Source Readme

Instructions for installing a local version of caCORE web-enabled LexEVS API v5.0 on a server machine. Outlines requirements for installation and provides licensing information.

## LexEVS Supported Loaders

List the loaders supported by LexEVS 5.0.

[LexEVS Loader Mapping](#)

[LexGrid Source Mapping Guide](#)

[LexEVS Grid Service Design and Implementation](#)

[LexEVS API Code Examples](#)

[LexEVS caCore Code Examples](#)

[LexEVS caGrid Code Examples](#)

[LexEVS DataGrid Code Examples](#)

[LexEVS Rest Code Examples](#)

## Service URLs

### LexEVS API URLs

EVS Home Page

<http://lexevsapi.nci.nih.gov>

Java API

<http://lexevsapi.nci.nih.gov/lexevsapi50>

Web services - Single endpoint interface

<http://lexevsapi.nci.nih.gov/lexevsapi50/services/lexevsapi50Service>

[LexEVS API WSDL file](#)

<http://lexevsapi.nci.nih.gov/lexevsapi50/services/lexevsapi50Service?wsdl>

XML-HTTP API

<http://lexevsapi.nci.nih.gov/lexevsapi50/{servlet}?query={returnClass}&{criteria}&resultCounter={counter}&startIn>  
For example:

<http://lexevsapi.nci.nih.gov/lexevsapi50/GetHTML?query=org.LexGrid.concepts.Entity&org.LexGrid.concepts.Entity>

## **LexEVS Grid Service URL**

caGrid Portal

<http://cagrid-portal.nci.nih.gov>

LexEVS Grid Service

<http://lexevsapi-analytical50.nci.nih.gov/wsrf/services/cagrid/LexEVSGridService>

LexEVS Grid Data Service

<http://lexevsapi-data50.nci.nih.gov/wsrf/services/cagrid/LexEVSDataService>

## **Support**

### **LexEVS FAQ**

Please visit our FAQs especially if you are new to LexEVS.

### **LexEVS End User forum**

Forum for end users to discuss and submit support issues regarding the LexEVS application.

### **LexEVS Developer forum**

Forum for developers to discuss and submit support issues regarding the LexEVS API.

### **LexEVS Documentation Feedback forum**

Forum for all users to discuss and submit support issues regarding the LexEVS documentation.

### **Bug Tracker for LexEVS**

Please visit for information on known bugs and enhancement requests related to LexEVS.

For more information please see the [VKC Support Statement](#)

## **Training materials and background information**

### **Learning about LexEVS**

Learn about LexEVS and it's history.

### **LexGrid/LexBIG (LexEVS) Background information**

Learn about the features, model, and components of the LexEVS repository.

### **Interacting with caCORE LexEVS**

Learn about caCORE and how to use it with LexEVS.

## **Presentations and demos**

### **? LexEVS 101 Presentation?** (1.63 MB)

Craig Stancl and Rick Kiefer  
February 22, 2010

### **Value Domain and Pick List Support in LexEVS 5.1** (775kb)

Sridhar Dwarkanath  
caBIG® VCDE and Architecture joint workspace meeting - Atlanta, GA  
October 20-22, 2009

### **LexEVS 5.0 Boot Camp**

LexEVS team  
NCI CBIIT Training facility - Rockville, Md.  
November 17-19 2009

### **LexEVS Overview** (12.5 MB)

LexEVS team  
2009 caBIG® Annual Meeting - Washington, D.C.  
July 20-22, 2009

### **? LexEVS API Overview**

Kevin Peterson and H. Scott Bauer  
Presentation to NCCH - Australia  
March 2, 2009

### **LexBIG/LexGrid Services for LexBIG 2.3 Model and API for the Grid**

H. Scott Bauer and Kevin Peterson  
Presentation to NCCH - Australia  
March 2, 2009

### **Terminology Tool Announcements**

Kevin Peterson  
caBIG® VCDE and Architecture joint workspace meeting - - Cambridge, Massachusetts  
May 12, 2009

## **Related tools**

**LexEVS Version 5.1**

**LexEVS Version 5.0**

**LexEVS Version 4.2.1**

**LexBIG Version 2.3**



## **Additional resources**

### **Tool Adopters LexEVS**

A list of individuals and organizations using LexEVS

### **NCICB Download Page**

A list of all available NCICB software components and tools.

### **Enterprise Vocabulary Services (EVS)**

Home page for Enterprise Vocabulary Services (EVS)

### **NCI Thesaurus**

NCI Thesaurus (NCIt) provides reference terminology for many NCI and other systems. It covers vocabulary for clinical care, translational and basic research, and public information and administrative activities.

### **NCI Metathesaurus**

NCI Metathesaurus (NCIm) is a wide-ranging biomedical terminology database that covers most terminologies used by NCI for clinical care, translational and basic research, and public information and administrative activities.